AXIS P3947-R Dome Camera

5 MP indoor onboard camera with audio

This rugged AI-powered indoor camera delivers great 5 MP image quality even in challenging light conditions. It's available with an M12 or RJ45 connector and different lens options. A built-in microphone and audio-in let you complement video material with audio. It's EN 50155 and EN 45545-2 certified for use on trains and trams. Scene profiles help optimize image quality by selecting the right settings for each environment. With the same form-factor, backplate, and accessories as other Axis onboard cameras, it's easy to upgrade existing installations. Furthermore, Axis Edge Vault safeguards the device.

- Complies with transportation industry regulations
- Microphone and support for audio-in
- Scene profiles to optimize image settings
- Lightfinder 2.0 and Forensic WDR
- Built-in cybersecurity features with Axis Edge Vault

SIP

FIPS 140-3 Inside #5139

AXIS P3947-R Dome Camera

Camera

Variants
AXIS P3947-R M12 2.8 mm
AXIS P3947-R M12 3.6 mm
AXIS P3947-R RJ45 2.8 mm
AXIS P3947-R RJ45 3.6 mm

Image sensor
1/2.8" progressive scan RGB CMOS
Pixel size 2.0 µm

Lens
2.8 mm, F2.0:
Horizontal field of view: 99°
Vertical field of view: 74°
Minimum focus distance: 1 m (3.2 ft)
M12 mount, fixed iris
3.6 mm, F2.0:
Horizontal field of view: 83°
Vertical field of view: 60°
Minimum focus distance: 0.3 m (1.0 ft)
M12 mount, fixed iris
See **Optional accessories** for exchangeable lenses

Minimum illumination
Color: 0.16 lux at 50 IRE, F2.0

Shutter speed
1/31500 s to 1/2 s

Camera adjustment
Pan ±30°, tilt 0–90°, rotation -179° to 180°

System on chip (SoC)

Model
CV75

Memory
2 GB RAM, 8 GB Flash

Compute capabilities
Deep learning processing unit (DLPU)

Video

Video compression
H.264 (MPEG-4 Part 10/AVC) Main and High Profiles
H.265 (MPEG-H Part 2/HEVC) Main Profile
Motion JPEG

Resolution
4:3: 2592x1944 to 320x240
16:9: 2560x1440 to 640x360
11:9: 704x576
5:4: 720x576

Frame rate
2592x1944 (4:3) @25/30 fps (with and without WDR)
2688x1512 (16:9) @25/30 fps (with and without WDR)
1920x1080 (16:9) @25/30 fps (with WDR)
1920x1080 (16:9) @50/60 fps (without WDR)

Video streaming
Up to 6 unique and configurable video streams [1]
Axis Zipstream technology in H.264 and H.265
Controllable frame rate and bandwidth
VBR/ABR/MBR H.264/H.265
Video streaming indicator

WDR
Forensic WDR: Up to 120 dB depending on scene

Noise reduction
Spatial filter (2D noise reduction)
Temporal filter (3D noise reduction)

Image settings
Saturation, contrast, brightness, sharpness, white balance, local contrast, tone mapping , exposure mode, exposure zones, compression, rotation: 0°, 90°, 180°, 270° including corridor format, mirroring, text and image overlay ,dynamic text and image overlay, privacy masks
Scene profiles: forensic, vivid, traffic overview

Image processing
Axis Zipstream, Forensic WDR, Lightfinder 2.0

Pan/Tilt/Zoom
Digital PTZ, preset positions
Limited guard tour, control queue

1. *We recommend a maximum of 3 unique video streams per camera or channel, for optimized user experience, network bandwidth, and storage utilization. A unique video stream can be served to many video clients in the network using multicast or unicast transport method via built-in stream reuse functionality.*

Audio

Features
Automatic gain control
10-band graphic equalizer for audio input

Input
Built-in microphone (can be disabled)
Physical microphone switch

Built-in microphone specification
Max sound pressure level: 128 dB
Frequency range: 100 - 10000 Hz

Encoding
LPCM 48 kHz, AAC-LC 8/16/32/44.1/48 kHz, G.711 PCM 8 kHz, G.726 ADPCM 8 kHz, Opus 8/16/48 kHz
Configurable bitrate

Network

Network protocols
IPv4, IPv6 USGv6, ICMPv4/ICMPv6, HTTP, HTTPS[2], HTTP/2, TLS[2], QoS Layer 3 DiffServ, FTP, SFTP, CIFS/SMB, SMTP, mDNS (Bonjour), UPnP®, SNMP v1/v2c/v3 (MIB-II), DNS/DNSv6, DDNS, NTP, NTS, RTSP, RTP, SRTP/RTSPS, TCP, UDP, IGMPv1/v2/v3, RTCP, ICMP, DHCPv4/v6, ARP, SSH, LLDP, CDP, MQTT v3.1.1, Secure syslog (RFC 3164/5424, UDP/TCP/TLS), Link-Local address (ZeroConf)

System integration

Application Programming Interface
Open API for software integration, including VAPIX®, metadata and AXIS Camera Application Platform (ACAP); specifications at *axis.com/developer-community*.
One-click cloud connection
ONVIF® Profile G, ONVIF® Profile M, ONVIF® Profile S, and ONVIF® Profile T, specifications at *onvif.org*
Support for Voice over IP (VoIP) through the Session Initiation Protocol (SIP), using peer-to-peer (P2P) or Private Branch Exchange (PBX).

Video management systems
Compatible with AXIS Camera Station Edge, AXIS Camera Station Pro, and video management software from Axis' partners available at *axis.com/vms*.

Onscreen controls
Wide dynamic range
Privacy masks

Event conditions
Application
Audio: physical microphone switch
Call: state, state change
Device status: above/below/within operating temperature, audit logs, IP address blocked/removed, live stream active, network lost, new IP address, system ready, within operating temperature
Edge storage: recording ongoing, storage disruption, storage health issues detected
I/O: manual trigger, virtual input is active
MQTT: MQTT client connected, stateless
Scheduled and recurring: schedule
Video: average bitrate degradation, tampering

Event actions
Calls: answer call, end calls, make call
LEDs: flash status LED, flash status LED while the rule is active
MQTT: send MQTT publish message
Notification: HTTP, HTTPS, TCP and email
Overlay text: use overlay text, use overlay text while the rule is active
Recordings: record video, record video while the rule is active
Security: erase configuration
SNMP trap messages: send, send while the rule is active
Images or video clips: FTP, SFTP, HTTP, HTTPS, network share and email
WDR mode: set WDR mode, set WDR mode while the rule is active

Built-in installation aids
Pixel counter, level grid

Analytics

Applications
Included
AXIS Tampering Detection, AXIS Video Motion Detection
Support for AXIS Camera Application Platform enabling installation of third-party applications, see *axis.com/acap*

Approvals

Product markings
BSMI, CE, ECE, FCC, KC, NOM, RCM, UL/cUL, VCCI, WEEE

2. *This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (openssl.org), and cryptographic software written by Eric Young (eay@cryptsoft.com).*

Supply chain
TAA compliant
NDAA 2023 compliant

EMC
EN 55032 Class A, EN 55035, EN 61000-6-1,
EN 61000-6-2, ECE R10 rev.06, EN 50498
Australia/New Zealand: RCM AS/NZS CISPR 32 Class A
Canada: ICES(A)/NMB(A)
Japan: VCCI Class A
Korea: KS C 9835, KS C 9832 Class A
USA: FCC Part 15 Subpart B Class A
Rolling stock: EN 50121-3-2, EN 50121-4,
IEC 62236-4

Safety
CAN/CSA C22.2 No. 62368-1 ed. 3,
IEC/EN 62368-1 ed. 3,
UL 62368-1 ed. 3,
EN 45545-2[3],
NFPA 130[3],
UN ECE R118

Environment
EN 50155 OT1/ST2/H1[3],
IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-14,
IEC 60068-2-27, IEC 60068-2-64, IEC 60529 IP66/IP67,
IEC 62262 IK10, NEMA 250 Type 4X,
IEC 61373 Cat 1 Class B[3],
IEC 60721-3-5 Class 5M6

Network
NIST SP500-267, IPv6 USGv6

Cybersecurity
ETSI EN 303 645, FIPS 140

Cybersecurity

Edge security
Software: Signed OS, brute force delay protection, digest authentication and OAuth 2.0 RFC6749 Client Credential Flow/OpenID Authorization Code Flow for centralized ADFS account management, password protection, Axis Cryptographic Module (FIPS 140-2 level 1)
Hardware: Axis Edge Vault cybersecurity platform
Secure keystore: secure element (CC EAL 6+, FIPS 140-3 Level 3), system-on-chip security (TEE)
Axis device ID, signed video, secure boot, encrypted filesystem (AES-XTS-Plain64 256bit)

Network security
IEEE 802.1X (EAP-TLS, PEAP-MSCHAPv2)[4], IEEE 802.1AR, HTTPS/HSTS[4], TLS v1.2/v1.3[4], Network Time Security (NTS), host-based firewall,

Documentation
AXIS OS Hardening Guide
Axis Vulnerability Management Policy
Axis Security Development Model
AXIS OS Software Bill of Material (SBOM)
To download documents, go to *axis.com/support/cybersecurity/resources*
To read more about Axis cybersecurity support, go to *axis.com/cybersecurity*

General

Casing
IP66/67-, NEMA 4X- and IK10-rated
Aluminum and plastic casing
For repainting instructions, go to the product's support page. For information about the impact on warranty, go to *axis.com/warranty-implication-when-repainting*.

Mounting
Inside vehicles

Power
Power over Ethernet (PoE) IEEE 802.3af Type 1 Class 2, Typical 3.55 W, max 4.42 W

Connectors
RJ45: 10BASE-T/100BASE-TX PoE
M12: female, rugged, D-coded with rotatable coupling nut
All connectors support PoE

Storage
Support for microSD/microSDHC/microSDXC card
Support for SD card encryption (AES-XTS-Plain64 256bit)
Recording to network-attached storage (NAS)
For SD card and NAS recommendations see *axis.com*

Operating conditions
-30 °C to 55 °C (-22 °F to 131 °F)
Maximum temperature (intermittent): 70 °C (158 °F)
Humidity: 10–100% RH (condensing)

Storage conditions
Temperature: -40 °C to 65 °C (-40 °F to 149 °F)
Humidity: 5–95% RH (non-condensing)

3. *Only applicable to M12 variant*
4. *This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (openssl.org), and cryptographic software written by Eric Young (eay@cryptsoft.com).*

Dimensions
For the overall product dimensions, see the dimension drawing in this datasheet.

Weight
250 g (0.55 lb)

Box content
Camera, installation guide, Windows[R] decoder 1-user license, lens tool

System tools
AXIS Site Designer, AXIS Device Manager, product selector, accessory selector, lens calculator
Available at *axis.com*

Languages
English, German, French, Spanish, Italian, Russian, Simplified Chinese, Japanese, Korean, Portuguese, Polish, Traditional Chinese, Dutch, Czech, Swedish, Finnish, Turkish, Thai, Vietnamese

Warranty
5-year warranty, see *axis.com/warranty*

Part numbers
Available at *axis.com/products/axis-p3947-r#part-numbers*

Optional accessories

Lens M12 2.4 mm, F2.1 IR: horizontal field of view 124°
Lens M12 2.8 mm, F2.0 IR: horizontal field of view 99°
Lens M12 3.6 mm, F2.0 IR: horizontal field of view 83°
Lens M12 6 mm, F2.0 IR: horizontal field of view 49°
Lens M12 8 mm, F1.6 IR: horizontal field of view 37°
Other
AXIS TP3826-E housing
AXIS TP3843 Dome Cover Clear
AXIS TP3844 Top Cover Black
For more accessories, go to *axis.com/products/axis-p3947-r#compatible-products*

Sustainability

Substance control
Compliant with the UNIFE Railway Industry Substance List (RISL) [(5)]
PVC free, BFR/CFR free in accordance with JEDEC/ECA Standard JS709
RoHS in accordance with EU RoHS Directive 2011/65/EU and 2015/863, and standard EN IEC 63000:2018
REACH in accordance with (EC) No 1907/2006. For SCIP UUID, see *echa.europa.eu*

Materials
Renewable carbon-based plastic content: 25%
Screened for conflict minerals in accordance with OECD guidelines
To read more about sustainability at Axis, go to *axis.com/about-axis/sustainability*

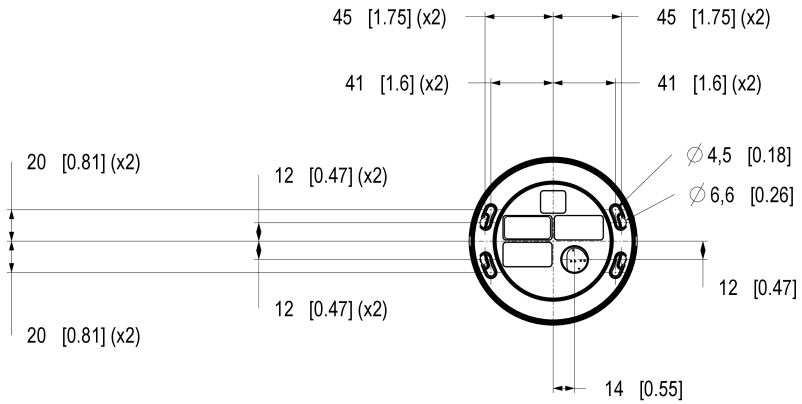
Environmental responsibility
axis.com/environmental-responsibility
Axis Communications is a signatory of the UN Global Compact, read more at *unglobalcompact.org*

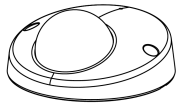
5. *only valid for AXIS P3947-R M12 variants*

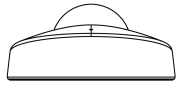
Detect, Observe, Recognize, Identify (DORI)

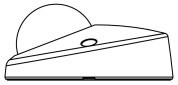
AXIS P3947-R M12 2.8 mm AXIS P3947-R RJ45 2.8 mm	DORI definition	Distance
Detect	25 px/m (8 px/ft)	60.3 m (198 ft)
Observe	63 px/m (19 px/ft)	23.9 m (78 ft)
Recognize	125 px/m (38 px/ft)	12 m (39 ft)
Identify	250 px/m (76 px/ft)	5.9 m (19 ft)

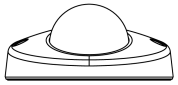
AXIS P3947-R M12 3.6 mm AXIS P3947-R RJ45 3.6 mm	DORI definition	Distance
Detect	25 px/m (8 px/ft)	71.6 m (235 ft)
Observe	63 px/m (19 px/ft)	28.4 m (93 ft)
Recognize	125 px/m (38 px/ft)	14.3 m (47 ft)
Identify	250 px/m (76 px/ft)	7.1 m (23 ft)

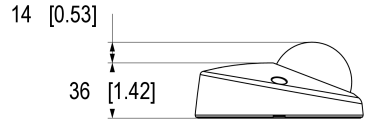


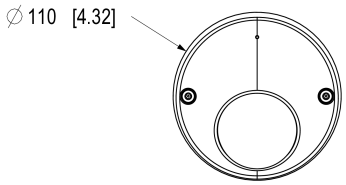












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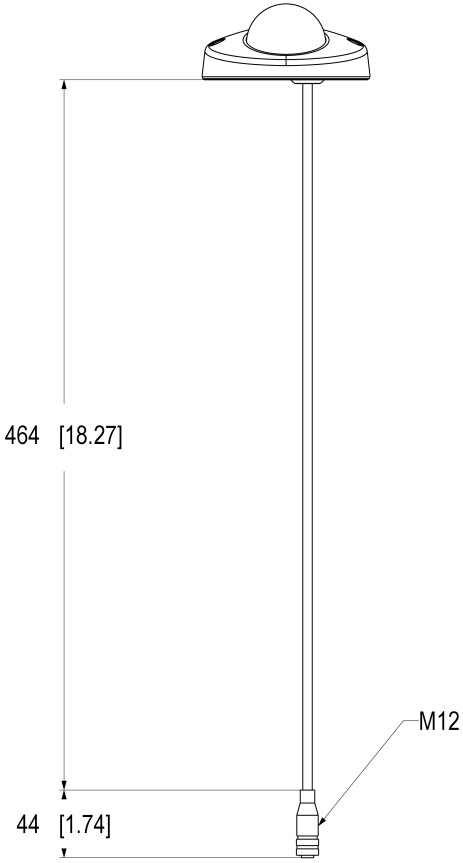
AXIS P3947-R Dome Camera

Dimensions in mm [inch]

Date	Version	Scale
2026 Jun-10	M1.5	1:2
Drawing Number	Size	Sheet
3619000	A2	1(3)



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AXIS P3947-R Dome Camera

Dimensions in mm [inch]

Date	Version	Scale
2026 Jun-10	M1.5	1:2
Drawing Number	Size	Sheet
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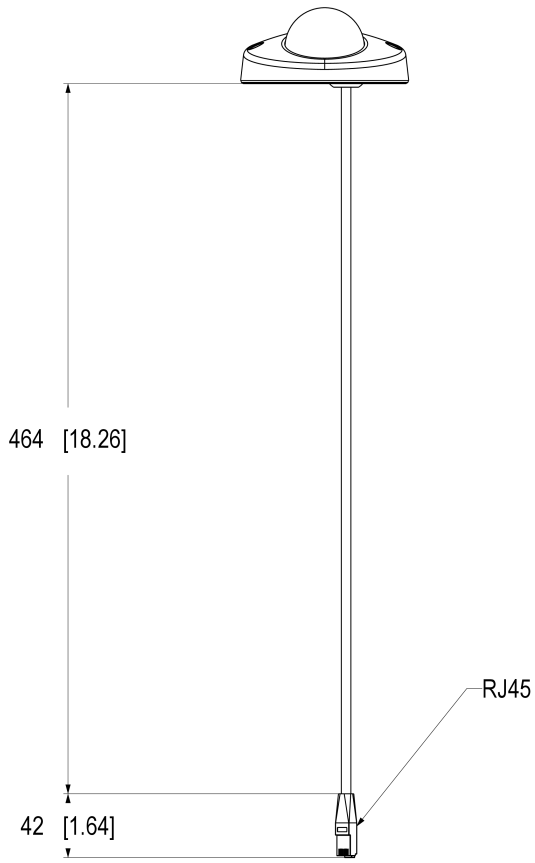

AXIS P3947-R Dome Camera

Dimensions in mm [inch]

Date	Version	Scale
2026 Jun-10	M1.5	1:2
Drawing Number	Size	Sheet
3619000	A2	3(3)

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Highlighted capabilities

Axis Edge Vault

Axis Edge Vault is the hardware-based cybersecurity platform that safeguards the Axis device. It forms the foundation that all secure operations depend on and offer features to protect the device's identity, safeguard its integrity and protect sensitive information from unauthorized access. For instance, **secure boot** ensures that a device can boot only with **signed OS**, which prevents physical supply chain tampering. With signed OS, the device is also able to validate new device software before accepting to install it. And the **secure keystore** is the critical building-block for protecting cryptographic information used for secure communication (IEEE 802.1X, HTTPS, Axis device ID, access control keys etc.) against malicious extraction in the event of a security breach. The secure keystore and secure connections are provided through a Common Criteria or FIPS 140 certified hardware-based cryptographic computing module.

Furthermore, signed video ensures that video evidence can be verified as untampered. Each camera uses its unique video signing key, which is securely stored in the secure keystore, to add a signature into the video stream allowing video to be traced back to the Axis camera from where it originated.

To read more about Axis Edge Vault, go to *axis. com/ solutions/edge-vault*.

Exchangeable lenses

Different lens options offer the opportunity to adjust the field of view (FoV) of the product, and thereby adapt it to your chosen area of use. The lens can be easily changed, for example to make the product cover wider areas, or to make it focus on details or objects of interest.

Rugged

Rugged is a term that for Axis modular and onboard products describes a device's endurance and stability in high vibration environments – over time. High vibration environments could be inside or close to machinery or inside vehicles. Rugged products from Axis are constructed to keep operating in these challenging conditions for the entire lifetime of the product.

For more information, see *axis.com/glossary*

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